

WHAT IS CLAIMED IS:

1. A welding device of a fuel tank for vehicles, comprising:

a feed unit for holding upper and lower panels of the fuel tank provided with flanges
5 formed at edges thereof under the condition that said flanges are stacked, and for transferring said
upper and lower panels in a horizontal direction;

a pressure unit for pressing said flanges of said upper and lower panels, transferred by
said feed unit, at front and rear portions, and for guiding the transfer of said upper and lower
panels; and

10 a laser beam generator perpendicularly positioned from central portions of said flanges
pressed by said pressure unit with a designated interval, for irradiating a laser beam to said upper
and lower panels so that said flanges of said upper and lower panels are fusion-welded together by
using heat generated from the irradiated laser beam.

15 2. The welding device as defined in claim 1, wherein said feed unit comprises:

a main body provided with a power source mounted thereon;

a power transmission unit extended from an upper portion of said main body for
transmitting a driving force generated from the power source of said main body;

20 a holding unit connected to an end of said power transmission unit for holding the upper
and lower surfaces of said upper and lower panels, and for allowing said upper and lower panels
to be rotated toward said pressure unit; and

a control unit for controlling the operation of said holding unit.

3. The welding device as defined in claim 1 or 2, wherein said pressure unit comprises:

25 a pressure jig separated from said feed unit by a designated distance;

first and second pressure members installed at one side of said pressure jig so that they cause a rolling motion, and spaced apart from each other by a designated distance such that they contact said flange of said lower panel in transferring said flanges;

third and fourth pressure members located correspondingly above said first and second pressure members such that they contact said upper panel; and

a pressure portion for elevating and lowering said third and fourth pressure members, and for supplying suitable pressure to said upper panel when it contacts said upper panel.

4. The welding device as defined in claim 3, wherein said first, second, third and fourth pressure members are ball casters.

5. The welding device as defined in claim 3, wherein said pressure portion comprises: first and second pressure bars respectively connected to said third and fourth pressure members;

rods respectively connected to said first and second pressure bars; and cylinders activated by supply of hydraulic or pneumatic pressure for respectively elevating and lowering said rods.

6. A welding method of a fuel tank for vehicles, comprising the steps of:
holding upper and lower panels of said fuel tank, having a symmetrical structure, provided with flanges formed at edges thereof so that said upper and lower panels are stacked;
transferring said flanges of said held upper and lower panels in a horizontal direction;
guiding the transfer of said flanges of said upper and lower panels when said flanges are transferred, and simultaneously applying suitable pressure to said flanges of said upper and lower panels at front and rear portions so that said flanges are adhered closely to each other; and

irradiating a laser beam from the upside of said flange of said upper panel to central portions of said flanges of said upper and lower panels so that said flanges are fusion-welded together by using heat generated from the irradiated laser beam.